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97084/00024
(STEVENS 3.0-008)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of
Svetlana A. Sukhishvili, et al.

Serial No.: 10/624,993

Confirmation No. 8177

Filed: July 22, 2003

For: METHODS FOR CONTROLLED
RELEASE OF MOLECULES FROM
LAYERED POLYMER FILMS

Group Art Unit: To be assigned

Examiner: To be assigned

I hereby certify that this correspondence and/or fee is being
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August 19, 2004
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Judith M. Trautman 8-19-04
(Signature) (Date)

X

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with the provisions of 37 C.F.R. §§ 1.97 and 1.98, applicants and their attorney respectfully request that the following patents and publications, copies of which are attached hereto, be made of record in the official United States Patent and Trademark Office file relating to the above-identified application. The citation of these patents and publications should not be construed as an admission that they contain statutory prior art with respect to the present invention.

Copies of the cited foreign patent documents and non-patent literature are provided herewith, in accordance with 37 CFR 1.98(a)(2). As permitted by the Commissioner's partial waiver of 37 CFR 1.98(a)(2)(i), copies of the cited U.S. patents and patent publications are not provided.

U.S. Patents

| | | |
|-----------|-----------|-----------|
| 4,684,558 | 5,626,863 | 6,103,785 |
| 4,997,656 | 5,650,165 | 6,187,872 |
| 5,143,071 | 5,674,275 | 6,228,390 |
| 5,171,264 | 5,674,346 | 6,306,922 |
| 5,219,325 | 5,700,585 | 6,316,018 |
| 5,275,838 | 5,712,346 | 6,444,744 |
| 5,354,790 | 5,807,636 | 6,468,383 |
| 5,480,717 | 5,837,377 | 6,509,098 |
| 5,505,957 | 5,840,329 | 6,740,409 |
| 5,567,435 | 5,846,214 | |
| 5,593,395 | 6,068,053 | |

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| US 2002/0071902 A1 | US 2003/0082225 A1 |
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Other Publications

Antipov Vieira, Euridice, et al.; Abstract of "Controlled and sustained release properties of polyelectrolyte multilayer capsules,"
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Hepel, Maria, et al.; Abstract of "Electrochemically stimulated controlled release of cations from composite conductive polymer matrix," Dept. of Chemistry,
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- Brynda, Eduard, et al., Abstract of "Method for immobilization of proteins and polyelectrolytes on surface of solids," Appln. WO 96-CZ10 19960326, 1996, 13 pp.
- Boulmedais, F., et al., "Multilayered Polypeptide Films: Secondary Structures and Effect of Various Stresses", Insitut Charles Sadron (CNRS), Starbourg Cedex, France, 2003, Langmuir, pp. 9873-9882.
- Sukhishvili, Svetlana A., et al., "Layered, Erasable, Ulrathin Polymer Films", Dept. of Materials Science and Engineering, Univ. of Illinois at Urbana-Champaign, Urbana, Illinois, 2000, J. Am. Chem. Soc., pp. 9550-9551.
- Nicol, Erwan, et al., "Polyelectrolyte Multilayers as Nanocontainers for Functional Hydrophilic Moleclues", Unite de Physique et de Chimie des Hauts Polymeres, Universite catholique de Louvain, Louvain-la-Neuve, Belgium, 2003, Langmuir, pp. 6178-6186.
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- Lavalle, Philippe, et al., "Direct Evidence for Vertical Diffusion and Exchange Processes of Polyanions and Polycations in Polyelectrolyte Multilayer Films", Instit National de la Sante Et de la Recherche Medicale, Unite 595, Faculte de Chirurgie Dentaire, Universite Louis Pasteur, Strasbourg Cedex, France, 2004, Macromolecules, pp. 1159-1162.
- Sukhishvili, Svetlana A., et al., "Layered, Erasable Polymer Multilayers Formed by Hydrogen- Bonded Sequential Self- Assembly", Dept. of Chemistry and Chemical Biology, Stevens Institute of Technology, Hoboken, New Jersey, 2002, Macromolecules, pp. 301-310.
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Kharlampieva, Eugenia, et al., "Ionization and pH Stability of Multilayers Formed by Self-Assembly of Weak Polyelectrolytes", Dept. of Chemistry and Chemical Biology, Stevens Institute of Tech., Hoboken, New Jersey, 2003, Langmuir, pp. 1235-1243.

Specification of U.S. Defensive Publication No. T099082, filed November 15, 2000.

In order to facilitate the Examiner's citation of the patents and publications listed above, applicants' attorney has completed United States Patent and Trademark Office Form PTO/SB/08A. The completed Form is attached hereto for the Examiner's convenience.

This Information Disclosure Statement is being filed before receipt of the first substantive Office Action, therefore, no fees are believed to be due. If any such fees are due, the Examiner is hereby authorized to charge them to Deposit Account No. 501402.

Respectfully submitted,

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(use as many sheets as necessary)

Sheet 1 of 6

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| Application Number | 10/624,993 |
| Filing Date | July 22, 2003 |
| First Named Inventor | Svetlana A. Sukhishvili |
| Art Unit | To be assigned |
| Examiner Name | To be assigned |
| Attorney Docket Number | 97084/00024 |

| Examiner Initials* | Cite No. ¹ | Document Number | | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
|-----------------------|--------------------------|-----------------|-------------------------|--------------------------------|--|---|
| | | Number | Kind Code (if known) | | | |
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This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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|---|--|--------------------|------------|--|-------|---|-------------------------------|
| INFORMATION DISCLOSURE CITATION <i>(Use several sheets if necessary)</i> | | | | ATTY DOCKET NO. 97084/00024 | | APPLICATION NO. 10/624,993 | |
| | | | | APPLICANT(S) Svetlana A. Sukhishvili, et al. | | | |
| | | | | FILING DATE July 22, 2003 | | GROUP ART UNIT To be assigned | |
| U.S. PATENT DOCUMENTS | | | | | | | |
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| | | US 2001/0041349 A1 | 11/15/2001 | Patron, et al. | | | |
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| | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION YES NO |
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| OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) | | | | | | | |
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| INFORMATION DISCLOSURE CITATION <i>(Use several sheets if necessary)</i> | | | | ATTY DOCKET NO. 97084/00024 | | APPLICATION NO. 10/624,993 | |
| | | | | Svetlana A. Sukhishvili, et al. | | | |
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| | | US 2002/0071902 A1 | 6/13/2002 | Ding, et al. | | | |
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| INFORMATION DISCLOSURE CITATION <i>(Use several sheets if necessary)</i> | | | | ATTY DOCKET NO. 97084/00024 | | APPLICATION NO. 10/624,993 | |
| | | | | Svetlana A. Sukhishvili, et al. | | | |
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| U.S. PATENT DOCUMENTS | | | | | | | |
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| *EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
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| | | US 2003/0069383 A1 | 4/10/2003 | Van Antwerp, et al. | | | |
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| OTHER DOCUMENTS <i>(Including Author, Title, Date, Pertinent Pages, Etc.)</i> | | | |
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| INFORMATION DISCLOSURE CITATION <i>(Use several sheets if necessary)</i> | | Docket Number (Optional) 97084/00024 | Application Number 10/624,993 |
| | | Applicant(s) Svetlana A. Sukhishvili, et al. | |
| | | Filing Date July 22, 2003 | Group Art Unit To be assigned |

| *EXAMINER INITIAL | OTHER DOCUMENTS <i>(Including Author, Title, Date, Pertinent Pages, Etc.)</i> |
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| | Antipov Vieira, Euridice, et al.; Abstract of "Controlled and sustained release properties of polyelectrolyte multilayer capsules," Application: WO 2001-EP9908 20010828, 2002, pp. 59. |
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| | Sun, Xiangying, et al.; Abstract of "PH and potential-sensitive film of polyaniline for drug release," College of Cehm. Engineering, Huaqiao Univ., Quanzhou, Peop. Rep. China, Huaqiao Daxue Xuebao, Ziran Kexueban 2000. |
| | Hepel, Maria et al.; Abstract of "Controlled binding and electrorelease of inorganic cations and drugs from composite polymer films," Dept. of Chemistry, State Univ. of New York, Postdam, NY, Polym. Mater. Sci. Eng., 1994. |
| | Brynda, Eduard, et al., Abstract of "Method for immobilization of proteins and polyelectrolytes on surface of solids," Appln. WO 96-CZ10 19960326, 1996, 13 pp. |
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| | Nicol, Erwan, et al., "Polyelectrolyte Multilayers as Nanocontainers for Functional Hydrophilic Moleclues", Unite de Physique et de Chimie des Hauts Polymeres, Universite catholique de Louvain, Louvain-la-Neuve, Belgium, 2003, Langmuir, pp. 6178-6186. |
| | Chung, A.J., et al., "Methods of Loading and Releasing Low Molecular Weight Cationic Molecules in Weak Polyelectrolyte Multilayer Films", Dept. of Materials Science and Engineering, Massachusetts Inst. of Technology, Cambridge, Mass., 2002, Languir, pp. 1176-1183. |
| | Lavalle, Philippe, et al., "Direct Evidence for Vertical Diffusion and Exchange Processes of Polyanions and Polycations in Polyelectrolyte Multilayer Films", Instit National de la Sante Et de la Recherche Medicale, Unite 595, Faculte de Chirurgie Dentaire, Universite Louis Pasteur, Strasbourg Cedex, France, 2004, Macromolecules, pp. 1159-1162. |
| | Sukhishvili, Svetlana A., et al., "Layered, Erasable Polymer Multilayers Formed by Hydrogen- Bonded Sequential Self- Assembly", Dept. of Chemistry and Chemical Biology, Stevens Institute of Technology, Hoboken, New Jersey, 2002, Macromolecules, pp. 301-310. |
| | Kharlampieva, Eugenia, et al., "Adsorption of Macromolecule as a Release Trigger of Small Molecule from Polymer Multilayers", Dept. of Chemistry & Chemical Biology, Stevens Institute of Technology, Hoboken, New Jersey, 2003, Polymer Preprints, pp.671-672. |
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| INFORMATION DISCLOSURE CITATION <i>(Use several sheets if necessary)</i> | | Docket Number (Optional) 97084/00024 | Application Number 10/624,993 |
| | | Applicant(s) Svetlana A. Sukhishvili, et al. | |
| | | Filing Date July 22, 2003 | Group Art Unit To be assigned. |
| *EXAMINER INITIAL | OTHER DOCUMENTS <i>(Including Author, Title, Date, Pertinent Pages, Etc.)</i> | | |
| | Kharlampieva, Eugenia, et al., "Ionization and pH Stability of Multilayers Formed by Self-Assembly of Weak Polyelectrolytes", Dept. of Chemistry and Chemical Biology, Stevens Institute of Tech., Hoboken, New Jersey, 2003, Langmuir, pp. 1235-1243. | | |
| | Specification of U.S. Defensive Publication No. T099082, filed November 15, 2000. | | |
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